

LEVKOYEV, I.I., kand.khim.nauk; VOMPE, A.F., doktor khim.nauk;  
SVESHNIKOV, N.N., kand.khim.nauk

Successes of the chemistry of sensitizing dyes. Khim.nauk i prom.  
3 no.5:587-606 '58. (MIRA 11:11)  
(Dyes and dyeing) (Photographic chemistry) (Silver halides)

AUTHORS:

Levkoyev, I.I., Lifshits, E.B.

SOV/77-3-6-5/15

TITLE:

On the Photographic Properties of Certain Symmetrical Carbocyanine Colorants with Different Alkyl Groups in Nitrogen Atoms of Heterogenous Residues (O fotograficheskikh svoystvakh nekotorykh simmetrichnykh karbotsianinovykh krasiteley s razlichnymi alkil'nymi gruppami pri atomakh azota geteroostatkov)

PERIODICAL:

Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1958, Vol 3, Nr 6, pp 419-426 and 3-page insert (USSR)

ABSTRACT:

The authors, assisted by S.V. Natanson in the evaluation of their research results, T.D. Rybnikova, G.F. Kurepina and B.G. Varshaver in the experimental part of their investigations, and V.V. Durmashkina in the synthesis of some colorants, investigated the photographic properties and absorption spectra in the emulsion of a series of symmetrical (no substitution in chain) carbocyanines with different heterocyclic residues containing methyl, ethyl or higher alkyl groups in nitrogen atoms. The absorption spectra were measured with an SF-2 spectrophotometer, the sensitized plates were exposed in the GOI (ISP-73) spectrosensitometer and developed in Chibisov's developer. Contrary to data quoted in literature, the methylates and ethylates of several colorants with

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residues of indolenine, thiazoline, benzimidazole and thiodiazole do not differ with respect to sensitization action, while in the cases of thia-, oxa-, and chihocarbocyanines, the N,N'-dimethyl derivatives are actually considerably less effective as compared with the ethyl derivatives. As far as the character of the sensitization spectra, fogging and desensibilization action, and the magnitude of the basicity are concerned, the methylates of all investigated carbocyanines are very close to the corresponding ethylates. As compared with the ethylates, the methylates of those carbocyanines which - contrary to the ethyl derivatives - are adsorbed to the emulsion microcrystals (mainly in the N-condition), have considerably less sensitization action. These conditions usually have such a feeble photochemical activity that the corresponding bands do not appear in the sensitization spectra. In a series of 1,1'-dialkyl-3,3,3',3'-tetramethyl indocarbocyanines, the inclination toward a sensitization of the second type grows with the transition from the

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methylate to the ethylate, especially the n-propylate. There are 10 graphs, 10 spectral photographs, 2 tables and 34 references, 11 of which are Soviet, 21 English and 2 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kinefotoinstitut (The All-Union Scientific Research Institute for Motion Pictures and Photography)

SUBMITTED: September 20, 1957

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AUTHORS: Zhiryakov, V. G., Levkoyev, I. I. SOV/20-120-5-29/67

TITLE: The Synthesis of 2-Methyl-4,5-Thiophene (2',3') Thiazole  
(Sintez 2-metil-4,5-tiofene (2',3')tiazola)

PERIODICAL: Doklady Akademii nauk SSSR, Vol. 120, Nr 5,  
pp. 1035 - 1037 (USSR), 1958

ABSTRACT: The isosterism of the groups -CH=CH- and -S- is well known for the thiazole- and pyridine derivatives. It was very interesting to observe the degree of isosterism of these groups in the series of the benzthiazole- and thiophene-thiazole which have a heterocyclic basis with condensed rings of thiazole and thiophene. In order to obtain the substance mentioned in the title the thioacetyl derivative of the  $\alpha$ -aminothiophene which was then oxidized by means of iron-ferricyanide was used as a starting point. The first attempts of a synthesis of the substance in question failed. A crystalline disulfide with a melting point of 107-108° (I) was formed. The substance in question was obtained with a yield of 10% of the theoretically possible beside the mentioned disulfide only after the addition of the 2-thioacetyl-amino-thiophene solution in a NaOH aqueous solution to a diluted iron ferricyanide solution. The obtained base is a colorless oil which gradually

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The Synthesis of 2-Methyl-4,5-Thiophene (2',3') Thiazole SOV/20-120-5-29/67  
turns yellow. It has a boiling point of 102 - 104° /7 mm with  
the characteristic smell of the quinoline bases. It forms easily  
a picrate, iodine methylate, and ethylate. Table 1 shows that  
several constants of the 2-methyl-4,5-thiophene (2',3') thiazole  
and of the 2-methyl benzthiazole as well as of their derivatives  
are rather similar. There are 1 table and 9 references, 2 of  
which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kino-foto-institut (All  
PRESENTED: Union Scientific Research Institute of Photography and Cinematog-  
raphy)  
SUBMITTED: February 6, 1958, by I.L.Khunyants, Member, Academy of Sciences,  
USSR  
January 30, 1958

1. Benzthiazole--Synthesis    2. Thiophene--Synthesis    3. Sulfur  
compounds--Properties

Card 2/2

AUTHORS: Shott-L'vova, Ye. A., Syrkin, Ya. K., Corresponding Member, SOV/2o-121-6-28/45  
Academy of Sciences, USSR, Levkoyev, I. I., Deychmeyster, M. V.

TITLE: The Dipole Moments of the Hemioxanines of the Derivatives of  
3-Ethylrhodanine and Indandione (1,3) (Dipol'nyye momenty  
gemioksaninov proizvodnykh 3-etylrodanina i indandiona (1,3))

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 6, pp 1048-1051  
(USSR)

ABSTRACT: The authors measured (at 25°) the dipole moments of some hemioxanines containing 3-ethylrhodanine groups and indandione groups by the heterodyne method in benzene. A table gives the formulae, the upper and the lower limiting values of the measured concentrations, the total polarization, the electron polarization, the values of the dipole moments in Debye (Debye) units, and the position of the maximum of absorption of the solutions of some pigments in alcohol ( $\lambda_{max}$ ). According to experimental results, compounds which differ only by the length of the polymethine group, have very different moments. An increase of the number of the double bonds between polar groups

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The Dipole Moments of the Hemioxanines of the Derivatives of 3-Ethylrhodanine and Indandione(1,3) SOV/2o-121-6-28/45

(>C=O and -N<sub>R</sub><sub>1</sub>) always causes an increase of the moment.

Various results are then given and discussed. Although the moment of indandione (1,3) 2,72 D is greater than that of 3-ethyl-rhodanine (1,75 D), the moments of the monomethine-hemioxanines have a noticeably lower value for the derivatives of indandione (1,3). This is probably, caused by the different directions of the moments in 3-ethylrhodanine and indandione. The variations of the investigated absorption spectra of the hemioxanines, which are caused by an elongation of their polymethylene chain, agree with the conclusions concerning the structure of these compounds which were drawn from the investigation of their dipole moments. There are 1 table and 13 references, 5 of which are Soviet.

SUBMITTED: May 9, 1958

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S/081/62/000/004/062/087  
B150/B138

AUTHORS: Khaykin, M. S., Derstuganov, G. V., Levkoyev, I. I., Kukhtin, V. A., Shamil'skaya, D. B.

TITLE: The developing properties of some 4-aminopyrazolones-(5) and their derivatives

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 456, abstract 4L421 (Tr. Vses. n.-i. kinofotoinstituta, no. 37, 1960, 17-26)

TEXT: A synthesis is made of a series of derivatives of 4-aminopyrazolones-5, and their photographic properties are investigated. Some of these compounds, e.g. containing the methyl and free or substitution carboxyl group in position 3, are active developing substances. The introduction of the amino or oxy group into position 3 reduces the developing power. The introduction of substitutes into the phenol nucleus, which is in position 1 of the pyrazolone, has less influence on photographic properties. It is indicated that the photographic properties of 4-aminopyrazolones are connected with the electronic character of the substituting groups.  
[Abstracter's note: Complete translation.]

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5.3610,5.3620

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SOV/79-30-1-64/78

AUTHORS: Levkoyev, I. I., Sveshnikov, N. N., Barvyn', N. S.,  
Krasnova, T. V.

TITLE: Investigations in the Field of Cyanine Dyes. XII.  
Concerning Some 5,5'-Dimethoxy-6,6'-Diaminothiacarbocyanines

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 291-299  
(USSR)

ABSTRACT: 5,5'-Dimethoxycyanines containing free or substituted aminogroups in 6,6'-positions (as well as 6,6'-amino-derivatives) were synthesized in order to study bathochromic shifts in absorption maxima caused by introduction of substituents into the chromophore. The following intermediates were synthesized: 2-methyl-6-p-toluenesulfamylaminobenzothiazole (I) (by heating 2-methyl-6-aminobenzothiazole with p-toluenesulfonyl chloride in pyridine and subsequent addition of dilute HCl) (mp 209-210°); 2-methyl-6-N-methyl-N-p-toluenesulfamylaminobenzothiazole (II) (by addition of solid dimethyl sulfate to the filtered solution of (I) and NaOH) (mp 160-160.5°);

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Investigations in the Field of Cyanine Dyes.  
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2-methyl-6-methylaminobenzothiazole (III) (by boiling compound (II) dissolved in HCl and subsequent neutralization) (mp 92-93°); and 2-methyl-6-N-methyl-N-acetylaminobenzothiazole (IV) (by heating the mixture of (III) and acetic anhydride with subsequent alkalization) (mp 105-106°). The 6,6'-diacylamino-, 5,5'-dimethoxy-6,6'-diacylamino-, and -6,6'-bis(dimethylamino)thiacarbocyanines were prepared by heating corresponding substituted 2-methylbenzothiazoles with ethyl or methyl p-toluenesulfonate. The quaternary salt thus obtained was mixed with orthoformate esters and pyridine and heated at 130-135°. The precipitate formed, after dilution of the reaction mass with ether, was dissolved in alcohol, and the cyanine was precipitated with aqueous KBr, KI, or NaCl. The following dyes were investigated spectrophotometrically (in ethanol, using SF-2 spectrophotometer): 3,3'-diethyl-5,5'-dimethoxy-6,6'-bis(dimethylamino)thiacarbocyanine iodide (1) (yield 16%, mp 211-212°,  $\lambda_{max}$  604); 3,3'-diethyl-9-methyl-5,5'-dimethoxy-6,6'-bis(dimethylamino)thiacarbo-

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cyanine perchlorate (2) (yield 15%, mp 170°,  $\lambda_{\max}$  588); its 3,3',9-triethyl derivative (3) yield 10%, mp 167-168°,  $\lambda_{\max}$  592; 3,3'-diethyl-5,5'-dimethoxy-6,6'-diacetylaminothiacarbocyanine bromide (4) (yield 40%, mp 270-272°,  $\lambda_{\max}$  598); its 3,3'-diethyl-9-methyl derivative (5) (yield 26% mp 262-264°,  $\lambda_{\max}$  578); its 3,3'-9-triethyl derivative (6) (yield 19%, mp 215-216°,  $\lambda_{\max}$  582); its 3,3'-dimethyl-9-ethyl derivative (7) (yield 35%, mp 243-245°,  $\lambda_{\max}$  578); 3,3'-diethyl-5,5'-dimethoxy-6,6'-bis(N-methyl-N-acetyl amino)thiacarbocyanine iodide (8) (yield 28%, mp 294-295°,  $\lambda_{\max}$  583); its 3,3'-diethyl-9-methyl derivative (9) (yield 25%, mp 292-294°,  $\lambda_{\max}$  565); its 3,3'-9-triethyl derivative (10) (yield 33%, mp 258-259°,  $\lambda_{\max}$  568); 3,3'-diethyl-5,5'-

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dimethoxy-6,6'-di(p-toluenesulfamylamino)thiacarbo-  
cyanine bromide (11) (yield 76%, mp 210-212°,  
 $\lambda_{\text{max}}$  592); 3,3'-diethyl-5,5'-dimethoxy-6,6'-bis(N-  
methyl-N-p-toluenesulfamylamino)thiacarbocyanine  
bromide (12) (yield 48%, mp 250-252°,  $\lambda_{\text{max}}$  585);  
3,3'-diethyl-6,6'-bis(N-methyl-N-acetylamino)thiacarbo-  
cyanine iodide (13) (yield 94%, mp 264-265°,  $\lambda_{\text{max}}$   
564); 3,3'-diethyl-9-methyl-6,6'-bis(N-methyl-N-  
acetylamino)thiacarbocyanine perchlorate (14) (yield  
48%, mp 232-234°,  $\lambda_{\text{max}}$  552); its 3,3',9-triethyl  
derivative (15) (yield 56%, mp 233-234°,  $\lambda_{\text{max}}$  555),  
3,3'-diethyl-6,6'-di(p-toluenesulfamylamino)thiacarbo-  
cyanine p-toluenesulfonate (16) (yield 74%, 280-282°,  
 $\lambda_{\text{max}}$  572); and 3,3'-diethyl-6,6'-bis(N-methyl-N-

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-p-toluene-sulfamylamino)thiacarbocyanine iodide (17).  
(yield 75%, mp 228-230°,  $\lambda_{max}$  568). The 6,6'-bis(N-methyl-N-acetylamino derivatives were prepared by heating respective iodides of 6,6'-bis(methylamino) derivatives with acetic anhydride and subsequent addition of ether, alcohol, and KI solutions to the cooled reaction mass. The 6,6'-bis(methylamino) derivatives were made by boiling iodides of 6,6'-bis-(N-methyl-N-p-toluenesulfamylamino)thiacarbocyanine derivatives with HCl. The general formulas of the above compounds are shown below.

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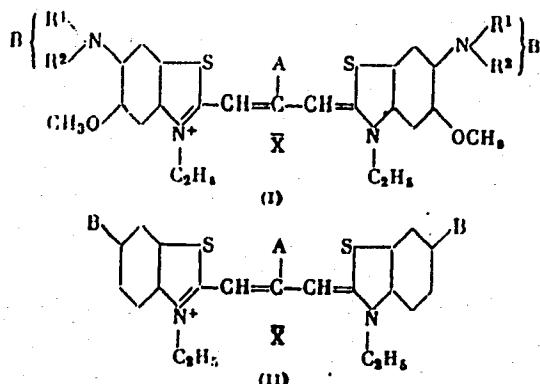


Table 1 gives the absorption maxima for some of the  
cyanine dyes (I and II, A = H) with the shifts of

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$\lambda_{\text{max}}$ .

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Table I

Substituents in 6,6'-positions	(I)	Absorption maximum (m $\mu$ )		Shift in $\lambda_{MAX}$ in comparison with the unsubstituted carbocyanine (in m $\mu$ )	Calculated for (I) additive shift (in m $\mu$ )	Deviation of the $\lambda_{MAX}$ of dye (I) from the calculated (in m $\mu$ )
		our data.	Literature data			
H		576	558	—	—	—
NH <sub>2</sub>		616	591	596	54	+ 4
CH <sub>3</sub> NH		630	608	610	68	+ 4
(CH <sub>3</sub> ) <sub>2</sub> N		604	612	612	72	+ 26
CH <sub>3</sub> CONH		598	577	581	37	+ 3
CH <sub>3</sub> CON(CH <sub>3</sub> )		583	564	579	24	+ 1
p-CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub> NH		592	572	577	32	+ 2
p-CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub> N(CH <sub>3</sub> ) <sub>2</sub>		585	568	570	28	- 1

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It can be seen that introduction of methoxy groups in 5,5'-position of the 6,6'-disubstituted thiacarbo-cyanines, containing free or substituted amino groups, causes an additive (close to the calculated value) bathochromic shift of the absorption maximum in all cases, except for 6,6'-bis(dimethylamino) derivatives. This abnormality is explained by the appearance of steric hindrance to the planar arrangement of the molecule (the planar arrangement is required by the unsaturation between the nitrogen and carbon atoms--

$>N^+=C<$ ) upon introduction of the two methyl groups (see Fig. 1).

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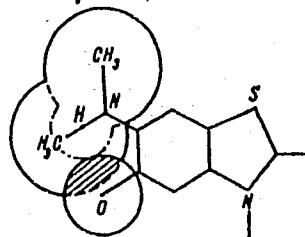


Fig. 1.

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There are 2 tables; and 25 references, 19 Soviet,  
1 Danish, 2 U.K., 3 U.S. The U.K. and U.S. references  
are: F. M. Hamer, J. Chem. Soc., 1927, 2798, 1928, 3160,  
W. R. Remington, J. Am. Chem. Soc., 67, 1838  
(1945); N. F. Hall, M. R. Sprinkle, J. Am.  
Chem. Soc., 54, 3469 (1932); L. P. Hammett, M. A. Paul,  
ibid., 55, 827 (1934); C. E. Ingham, G. C. Hampson,  
J. Chem. Soc., 1939, 981; P. W. Vittum, G. H. Brown,  
J. Am. Chem. Soc., 68, 2235 (1946).

Investigations in the Field of Cyanine Dyes.  
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ASSOCIATION: All-Union Scientific Research Motion Picture and  
Photography Institute (Vsesoyuznyy nauchno-issledovatel'  
skiy kinofotoinstitut)

SUBMITTED: October 21, 1958

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LEVKOYEV, I.I.; SVESHNIKOV, N.N.; GIPP, N.K.; DURMASHKINA, V.V.; BARVYN', N.S.

Studies in the field of cyanine dyes. Part 14: Some thiacyanines  
containing ethyl or isopropyl groups in the heterocyclic residues.  
Trudy NIKFI no.40:5-11 '60. (MIRA 15:2)

(Cyanines)(Dyes and dyeing)

LEVKOYEV, I.I.; DURMASHKINA, V.V.

Studies in the field of cyanine dyes. Part 16: Some properties  
of the quaternary salts of 9-methylphenanthridine. Trudy NIKFI  
no.40:21-25 '60. (MIRA 15:2)  
(Cyanines) (Dyes and dyeing)

PORTNAYA, B.S.; BOBKOVА, T.P.; KRASHENINNIKOVA, M.V.; CHEL'TSOV, V.S.;  
LEVKOYEV, I.I.

Studies in the field of azomethine dyes. Part 4: Indoaniline dyes  
derivatives of 1,2-hydroxynaphthoic acid anides containing hetero-  
cyclic residues in the presence of nitrogen amide. Trudy NIKFI no.  
40:106-118 '60. (MIRA 15:2)

(Indoaniline) (Dyes and dyeing)

SHIROKOVA, N.I.; RUSSKOVA, Ye.F.; ALISHOYEVA, A.B.; GITINA, R.M.; LEVKOYEV,  
I.I.; KOZLOV, P.V.

Polycarbonates. Part 3: Synthesis of 2, 2-bis(4'-hydroxyphenyl)  
propane polycarbonates in a homogeneous medium and their properties.  
Vysokom.sosed. 3 no.4:642-649 Ap '61. (MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy kino-foto institut.  
(Carbonic acid)

STREL'NIKOVA, A.P.; LEVKOYEV, I.I.; KIRILLOV, N.I.

Studying the formation of dyes during the black and white development of color films. Zhur. nauch. i prikl. fot. i kin. 6 no.1:6-13 Ja-F '61. (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut. (NIKIF).  
(Color photography--Developing and developers)

SOLOV'YEVA, I.A.; LEVKOYEV, I.I.; GUSEVA, A.G.

Structure of colored substances forming under the effect of the oxydation by air oxygen of the color components, derivatives of pyrazolone(5). Trudy NIKFI no.40:95-105 '60. (MIRA 15:2)  
(Pyrazoline)(Color photography--Films)

USPENSKIY, V.I.; LEVKOYEV, I.I.; VENDROVSKIY, K.V.

Third Hungarian Conference on Scientific and Applied Photography.  
Zhur.nauch.i prikl.fot.i kin. 7 no.1:78-80 Ja-F '62.

(MIRA 15:3)

(Photography--Congresses)

KHAYKIN, M.S.; DERSTUGANOV, G.V.; LEVKOYEV, I.I.; KUKHTIN, V.A.; SHAMIL'SKAYA, D.B.

Developing properties of some 4-amino- 5-pyrazolones and their derivatives. Trudy NIKFI no.46:5-16 '62.

(MIRA 18:8)

LEVKOYEV, I.I.; BASHKIROVA, A.Ya.

Alkylation of 2-methylindole with esters of aromatic sulfonic acids. Zhur.prikl.khim. 35 no.3:683-689 Mr '62, (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.  
(Indole) (Sulfonic acids)

NATANSON, S.V.; LEVKOYEV, I.I.

Interaction of sensitizing dyes with molecular bromide. Zhur.  
nauch.i prikl.fot.i kin. 7 no.4:300-304 Jl-Ag '62. (MIRA 15:8)

1. Vsescuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).  
(Photographic emulsions)

SHIROKOVA, N. I.; LEVKOVICH, I. I.; SVESHNIKOV, N. N.

Synthesis of meso-alkyl- and aryl indocarbocyanines and their  
coloration. Zhur. VKHO 7 no.5:587-588 '62.  
(MIRA 15:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.

(Carbocyanine dyes)

S/058/63/000/003/045/10<sup>4</sup>  
A062/A101

AUTHORS: Portnaya, B. S., Solov'yeva, I. A., Turitsyna, N. F., Leykoyev, I. I., Chel'tsov, V. S., Krasheninnikova, M. V., Bobkova, T. P., Tkachenko, T. G.

TITLE: On the properties of masking color components of arylazo derived pyrazolones (5) and anilides of 1,2-oxynaphthoic acid

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 86, abstract 3D58<sup>4</sup>  
("Uspekhi nauchn. fotogr.", 1962, v. 8, 35 - 43)

TEXT: An investigation was made on the dependence of the color photographic properties of some arylazo derived pyrazolones and anilides of 1,2-oxynaphthoic acid on the nature and position of the substitution agents in the arylazo-group. It is established that the phenyl derivatives of pyrazolones and of 1,2-oxynaphthoic acid are compounds considerably less susceptible of reaction in the conditions of color developing than the initial purple and pale blue components. The entry of electropositive substitution agents into the phenylazo-group somewhat increases the reaction capacity of the components, the most favorable influence

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On the properties of masking color components...

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then being shown by the oxy-group in the position 4. Electronegative substitution agents in the phenylazo-group of masking pale blue components cause a sharp decrease of the activity, and in the case of derivatives of 3-alkylpyrazolone they may show also a favorable influence. Some of the obtained compounds may be employed for preparing negative and contratype masking color motion-picture materials. It is shown that arylazo-derivatives of 3-alkyl- and 3-acylamino-pyrazolone usually absorb the light of the blue-violet range (maximum of absorption 400 - 420 m $\mu$ ). The entry of strong electron donor substitution agents into the phenylazo-group causes an appreciable deepening of their coloration. The absorption spectra of the masking pale blue components of the derivatives of 1,2-oxy-naphthoic acid include the blue-violet and partially the green portion of the spectrum and in many cases they consist of two bands whose relative intensity may change strongly according to the nature and position of the substitution agents in the arylazo-group. A particularly sharp increase of the absorption intensity in the blue-violet range takes place in the case of 2-methyl- and 2-chlorophenylazo derivatives. It is established that the majority of the investigated masking purple and pale blue components at pH 5 are, as a rule, stable enough in respect to solutions containing ferrocyanic potassium. In alkaline bleaching solutions their stability strongly decreases.

[Abstracter's note: Complete translation]

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S/058/63/000/002/026/070  
A062/A101

AUTHOR:

Lifshits, E. B., Natanson, S. V., Levkoyev, I. I.

TITLE:

About the influence of non-diffusing color components on the process of optical sensitization of silver halide emulsions

PERIODICAL: Referativnyy zhurnal, Fizika, no. 2, 1963, 96 - 97, abstract 2D627  
("Uspekhi nauch. fotogr.", 1962, v. 8, 44 - 55)

TEXT: A study was made of the influence of non-diffusing color components on the sensitizing action, the desorption and the absorption spectra in emulsions of dyes possessing different component stabilities and tendencies to polymerization. It is shown that under the influence of the components near those applied for obtaining lightsensitive layer: practically all dyes are desorbed and then, if their sensitizing action decreases, that action is the more reduced the higher the desorption degree. The decrease of the sensitizing action of dyes is due not only to the desorption thereof, but also to the depressing influence of the adsorbed component on the transmission of the energy absorbed by the sensitizing agent. It is ascertained that the character

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000929710

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S/058/63/000/002/026/070

About the influence of non-diffusing color components on A062/A101

of the spectra of sensitization and absorption on the silver halide of non-polymerizable dyes does not change in the presence of color components. In a number of polymerizable dyes the character of the absorption spectra of component stable compounds considerably varies owing both to the main desorption of various polymolecular states and to the redistribution of aggregate states in the adsorption layer. In the case of component stable sensitizers these changes are, as a rule, small. The authors assume that the increase of the sensitizing action of certain dyes in the presence of non-diffusing components, and also of a number of other surface active substances, may be explained by the elimination, from the surface of the silver halide, of ions or compounds that render difficult transmission of energy from the sensitizer to the silver halide lattice, or by the fact that the orientation of the dye molecules in the adsorption layer is favorable to the process of transmission of the absorbed energy. There are 18 references.

[Abstracter's note: Complete translation]

Card 2/2

S/058/63/000/003/040/104  
A062/A101

AUTHORS: Khaykin, M. S., Derstuganov, G. V., Levkoyev, I. I., Kukhtin, V. A.  
Shamil'skaya, D. B.

TITLE: On the developing properties of some 4-aminopyrazolones (5) and  
their derivatives. Report II

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 82, abstract 3D560  
("Tr. Vses. n.-i. kinofotoin-ta", 1962, no. 46, 5 - 16)

TEXT: A synthesis was made of some 1-phenyl and 1-sulphophenyl-3-carbo-  
methoxy- and 3-carbalcoxymethyl-4-aminopyrazolones (5). The developing proper-  
ties of these compounds were investigated. It is shown that the conservation  
of weakly alkaline developing solutions, containing 4-aminopyrazolones, depends  
to a large extent on the electron character of the substitutes in the 1st and  
3rd positions of these compounds. It is made clear that the introduction of  
electronegative substitutes into the 1st and 3rd position of 4-aminopyrazolones  
reduces the stability of the developing solutions of these compounds with res-  
pect to the ions of bromine. For report I see RZhFiz, 1962, 10287.  
[Abstracter's note: Complete translation]

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000929710  
Card 7

GNEVYSHEVA, T.G.; LEVKOYEV, I.I.

Polymethine dyes, derivatives of substituted thiazolines.  
Dokl. AN SSSR 146 no.5:1081-1083 0 '62. (MIRA 15 10)

1. Nauchno-issledovatel'skiy kinofotoinstitut. Predstavлено  
академиком I.L.Knunyantsem.  
(Dyes and dyeing) (Thiazoline)

L 6911-65 EWT(n)/EWP(j) PC-4 SSD/ASD(a)-5/AFWL/ESD(gs)/ESD(t)/RAEM(t) RM

ACCESSION NR: AR4039919

S/0058/64/000/004/DI16/DI16

55

SOURCE: Ref. zh. Fiz., Abs. 4D893

AUTHORS: Gnewy\*sheva, T. G.; Lifshits, E. B.; Levkoyev, I. I.;  
Sy\*tnik, Z. P.

TITLE: Research in the field of cyanine dyes. XI. On some polymethine dyes from derivatives of phenyl substituted thiazolines

CITED SOURCE: Kinotekhnika, Nauchno-tekh. sb., vy\*p. 4, 1963, 37-53

TOPIC TAGS: organic derivative, photographic emulsion, conjugated system, dye, sensitivity increase, color film

TRANSLATION: Optical sensitizer-dyes, symmetrical carbo-, di-, and tri-carbocyanines, merocyanine derivatives of 2-ethylrhodianine and some rhodacyanines were obtained from quaternary salts 2-methyl-5-phenyl- and 2-methyl 4,5-diphenyl thiazoline. The optical properties

Card 1/2

L 6914-65  
ACCESSION NR: AR4039919

of these dyes were investigated in solution and in an absorption layer on AgHal, and also in the presence of colored nondiffusing components. It is shown that phenyl groups not conjugated with the chromophor hardly influence the coloring of the dye and do not increase its tendency to formation of polymer aggregates on the AgHal surface, but greatly reduce the basicity of the thiazoline nucleus.

The entry of the phenyl groups into the thiazoline cyanines and rhodacyanines reduces their sensitizing action, the degree of reduction in the case of cyanines being the larger, the longer the polymethine chain of the dye. Introduction of nonconjugated phenyl groups into the heteroresidues of the same dyes results in an increase of their component stability. Bibliography, 26 titles. For part XVIII see Abstract 4D867. A. Kartuzhanskiy.

SUB CODE: ES, OC

ENCL: 00

Card 2/2

SVESHNIKOV, N.N.; LEVKOYEV, I.I.; SHIROKOVA, N.I.; DAMIR, N.A.

Action of phosgene on acetylmethylen derivatives of heterocyclic bases and some reactions between the compounds formed. Dokl. AN SSSR 148 no.5:1091-1094 F '63. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.  
Predstavлено академиком M.I.Kabachnikom.  
(Phosgene) (Heterocyclic compounds)

LEVKOYEV, I.I.; SVESHNIKOV, N.N.; SHIROKOVA, N.I.

Some transformations of quaternary salts of 2- $\beta$ -chloropropenyl derivatives of heterocyclic bases. Dokl. AN SSSR 153 no.2:  
350-353 N '63. (MIRA 16:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.  
Predstavлено академиком М.И.Кабачником.

VOMPE, A. F.; LEVKOVICH, I. I.; TURITSYNA, N. F.; DURMASHKINA, V. V.;  
IVANOVA, L. V.

Reactions of pyridinium salts. Part 3: Interaction of bromocyanides  
of pyridinium bases with amines. Zhur. ob. Khim. 34 no.6:1758-  
1771 Je '64.  
1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut i  
Institut organicheskoy khimii AN SSSR.

14-51 2001 T-33 (1) - Page 1  
APR 20 1972  
14-51 2001 T-33 (1) - Page 1  
APR 20 1972

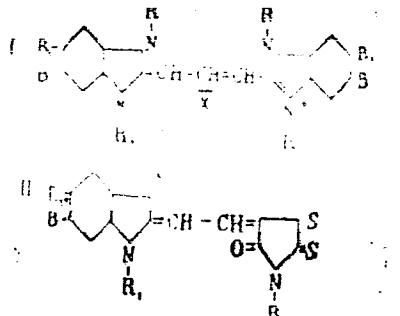
Naumitskaya, L. B.  
Photographic materials, Class 57.

CLASS: photographic materials, photographic emulsion, C-47  
ITEM TAGS: photography, photographic material, photographic emulsion, silver halide  
silver emulsion, silver bromide, silver iodide

ITEM NUMBER: 14-51 2001 T-33 (1)  
ITEM DESCRIPTION: Photographic materials, photographic emulsion, C-47

L 31094-65

ACCESSION NR: AP5004978



2

where, R<sub>1</sub> = F, Cl, or C<sub>1-4</sub> groups; R<sub>2</sub> = CH<sub>2</sub> or C<sub>1-4</sub> groups; R<sub>3</sub> = alkyl or aryl, R<sub>4</sub> = alkyl; X = acid residue. In a different return, to obtain a green-sensitive layer in layered materials, after the introduction of sensitizers, the emulsion also receives nondiffusing components, such as the pyrazolone derivatives. Orig. art. has: 1 formula.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (All-Union Scientific Research Institute of Cinematic Photography); Institut organicheskoy

KHAYKIN, M.S.; LEVKOVICH, I.I.; KOKHTIN, V.A.

Synthesis of certain 3-methyl and 3-phenyl-4-amino-5-pyrazolinones.  
Zhur. org. khim. 1 no.1:133-136 Ja '65. (MIRA 18:5)

1. Kazanskiy filial Vsesoyuznogo nauchno-issledovatel'skogo kinofoto-instituta.

L 62765-65 EWA(k)/FED/EMG(r)/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(1)/T/EEC(b)-2/EWP(k)/  
EWA(m)-2/EWA(h) Pm-4/Pn-4/Pc-4/Pg-4/Pf-4/Peb/Pi-4/P1-4 IJP(c) KG/JAJ/WH  
ACCESSION NR: AJ 5019580 UR/0386/65/001/006/0011/0014

AUTHORS: V. S. Gavrilin, A. S. Petrov, V. S. Levkovich, T. L. Vompe, A. K.

TITLE: Neodymium-glass laser with near-critical single pulses

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.  
Prilozheniya, v. 1, no. 6, 1965, 11-14

TOPIC TAGS: neodymium laser, glass laser, Q switching, passive switching, pentacarbocyanine, pulsedwidth control

ABSTRACT: An attempt was made to find a phototropic material which would provide switching of a neodymium-glass laser with pulsedwidths near the critical. One type of pentacarbocyanines was found to give single pulses with short duration. The experimental laser consisted of a neodymium rod 120 mm in length and 10 mm in diameter. The effective length of the resonator  $l_{eff}$  was 55 cm, which consisted of two external mirrors with  $R_1 = 99\%$  and  $R_2 = 40\%$ . The transmission coefficient of the solution-containing tube placed between the neodymium rod and the  $R_2$  mirror for  $\lambda = 1.06 \mu m$  was 20%. Under these conditions a ~10-nanosecond single pulse was obtained. With a 3000-j pumping energy the pulse power was ~50 Mw and a spark was observed at the focus of the  $f = 500$  mm lens. An increase in  $l_{eff}$  caused a nonlinear increase

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L-62765-65

ACCESSION NR: AP5019589

in pulselwidth, and at  $L_{eff} = 300$  cm the pulselwidth was  $\sim 330$  nanosec. At  $L_{eff} = 55$  cm, a pulselwidth of  $\sim 10$  nanosec corresponded to a quintuple passage of a quantum between mirrors. The results indicate that the pulselwidth is practically critical and is determined by the  $L_{eff}$  and not by the switch. The switching time was less than 10 nanosec. A further reduction of  $L_{eff}$  and an increase in initial inverse population of the metastable level will result in even shorter single pulses. Orig. art. has 1 figure. [YK]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

TYPEWRITER: 04May65

FNU: 17

ORG. VOL.: 26

NO. REF. Sov: 004

OTHFF: 003

ATT. PRESS: 4056

awm  
Card 2/2

PORPNAYA, B.S.; LEVKOVICH, I.I.

Azomethine dyes. Part 8: Coloration of indoaniline dyes, derivatives of 2-acylaminophenols. Zhur. org. khim. 1 no. 12:2202-2212  
D \*65 (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.  
Submitted December 2, 1964.

SHIROKOVA, N.I.; SVESHNIKOV, N.N.; LEVKOYEV, I.I.

Effect of quaternary salts of  $\beta$ -chlorovinyl derivatives of heterocyclic bases on some carbo- and dimethine merocyanine dyes.  
Dokl. AN SSSR 162 no.3:603-606 My '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut. Submitted September 14, 1964.

POROZNOVA, B.S.; TKACHENKO, T.G.; BOBKOV, T.P.; CHEL'NIKOV, V.S.;  
LEVKOYEV, I.I.

Studies in the field of azomethine dyes. Report No.7: Photographic  
properties of some substituted phenols of the benzene series. Zhur.  
nauch. i prikl. fot. i kin. 10 no.4:278-286 Jl-Ag '65.

(MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).

Causes in the Reduction of the Sea-going Convalescent Dose by Non-Diluting

Description of the reduction explanation offered

SEWW

AFS  
m KLL

LEVKOYeva, Ye.F.; DAVIDOVSKIY, I.V., redaktor.

[Wound process in the eye] Ranevoi protsess v glazu. Moskva, Izd. Akademii  
med.nauk SSSR, 1951. 151 p.  
(*Rana oči*)  
(Eye--Wounds and injuries)

LEVKOYeva, Y.E. F.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
LEVKOYeva, E. F.	"The Wound Process in the Eye"	State Scientific Research Institute of Eye Diseases imeni Gel'mgol'ts

SO: W-30604, 7 July 1954

LEVKOYEVA, Ye. F.

EXCERPTA MEDICA Sec.12 Vo.11/6 Ophthalmology June 57

919. LEVKOEVA E. F., GOLUBEVA K. I. and PRIGOZHINA A. L. Helmholtz Inst. of Dis. of the Eye, Moscow. \* Tissue reactions mediated through the nervous system during the experimental reflex rise in intraocular pressure (Russian text) OFTAL. Z. 1956, 3 (131-136) Illus. 6

The morphological substrate of the periocular reflex was studied in its peripheral component during an experimental increase in intraocular pressure. Several series of experiments were conducted on rabbits, with ligation of 3 venae vorticoseae on one side. On the side of the operation, an increase in intraocular pressure of up to 45 mm. was regularly observed immediately after the operation, and of up to 39 mm., and over, on the other side. After 2-5 days the intraocular pressure approached the initial value. Local changes consisted in oedema of the eyelids, chemosis of the bulbar conjunctiva, and lacrimation. Desquamation of the epithelium and corneal opacity were also observed, as well as in some cases, peripheral corneal ulcers with vascularization of the cornea. Manifestations of stasis, congestion of the limbus, and of the whole uveal tract, and hyperaemia of the retinal vessels were present. The following was also established: an increase in vascular permeability with exudation of the plasma and of the formed elements of the blood into the tissues; haemorrhages from the vessels of the ciliary processes varicosities were revealed, fibrillary degeneration of the nerve fibres, and swelling of the neuroplasm. In the cornea, isolated fragments of larger nerve trunks were found; in the region of dilated vessels of the uveal tract: oedema, varicosities, vacuolization, tortuosity, non-uniform staining. Degenerative changes such as argentophilia, varicosities, and non-uniform staining were observed in the layer of nerve fibres of the retina. Analogous vascular and nervous changes were noted in the other (intact) eye. References 13.

Kulikova - Moscow

EXCERPTA MEDICA SEC. 12 Vol. 12/8 Ophth. Aug. 58

1356. THE MORPHOLOGY OF THE PERSISTENT FORMS OF TRACHOMA (Russian text) - Levkoleva E. F. - SBORN. INFORM. -METOD. MATERIAL. INST. 1956, 4 (92-93)

In the midst of unbroken corneal tissue infiltrations are observed along the vessels in the form of straight rods. The cellular composition of the infiltrations is fibrocytic. In 4 cases, large reticular and differentiated lymphoblastic forms predominated. On the surface of the conjunctiva were observed well marked epithelial proliferations, obstructing local treatment.

(S)

USSR/Human and Animal Morphology. Pathological Anatomy

S-5

Nbs Jour : Ref Zhur - Biol., No 20, 1958, No 92903

Author : Levkoyeva E.F.  
Inst : State Scientific Research Institute for Ocular Diseases  
Title : Comparative Morphological and Clinical Study of Characteristics of Stage III and Stubborn, Long-Lasting Forms of Trachoma.

Orig Pub : Uch. zap. i inform. metod. materialy. Gos. n.-i. in-t glazn. bol'zney, 1957, No 5, 45-53

Abstract : A description is given of the morphological differences between cases of trachoma with the usual course of the process and resistant trachoma, which consists of a coarser and more extended cicatrization, and greater changes in the epithelium forming compound complexes on the surface of the conjunctiva. Marked changes were noted, including destruction of the nervous system and a profound transformation of the argyrophilic substance. But the indicated differences were quantitative.

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rather than qualitative.

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LEVKOYeva, E.F., prof.; GOLUBEVA, K.I., starshiy nauchnyy sotrudnik;  
PRIGOZHINA, A.L., starshiy nauchnyy sotrudnik.

Changes in nerve tissue following experimental reflex increase in  
intraocular pressure. Report No.2. Oft.zhur. 13 no.2:67-70 '58.

(MIRA 11:4)

1. Iz patologicheskogo otdeleniya (zav.-prof. E.F. Levkoyeva)  
Gosudarstvennogo nauchno-issledovatel'skogo instituta glaznykh  
bolezney im. Gel'mgol'tsa.  
(EYE)

LEVKOYeva, E.F., RAKOVA, S.S. (Moskva)

Studies of ocular angiomas using tissue culture [with summary in  
English]. Arkh.pat. 20 no.8:42-54 '58 (MIRA 11:9)

1. Iz patologoanatomiceskoy laboratori (zav. - prof. E.F. Levkoyeva)  
Instituta oftal'mologii imeni Gel'mgol'tsa.  
(EYE, neoplasms,  
angioma, tissue culture (Rus))  
(ANGIOMA,  
eye, tissue culture (Rus))  
(TISSUE CULTURES,  
angioma from eye (Rus))

LEVKOJEVA, E.F.

Pterygium (pathogenesis and pathological anatomy). Cesk.ofth.  
17 no.1:1-4 Ja '61.

1. Patologicko-histologicke oddeleni Helmholtzova statniho  
vedeckovyskumneho ustavu ocnich chorob, Moskva, vedouci oddeleni  
E.F. Levkojeva, reditel ustavu A.V. Roslavcev.  
(PTERYGIUM etiol)

LEVKOYeva, E.F. (Moskva)

Tumor-like hyperplastic processes in the conjunctiva. Arkh.pat.  
(MIRA 14:8)  
21 no.10:3-7 '59.

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo instituta glaznykh  
bolezней имени Гельмогольца.  
(CONJUNCTIVA—TUMORS)

LEVKOYEVA, E.F. (Moskva)

Pterygium, its pathogenesis and pathoanatomy. Oft. zhur. 17  
no.1:3-8 '62. (MIRA 15:3)

1. Iz patogistologicheskogo otdeleniya Gosudarstvennogo  
nauchno-issledovatel'skogo instituta glaznykh bolezney imeni  
Gel'mgol'tsa (direktor - A.V. Roslyatsev).  
(CORNEA--DISEASES)

LEVKOYEVA, E.F. (Moskva)

Amyloidosis of the conjunctiva. Oft.zhur. 17 no.7:401-406  
#62. (MIRA 16:3)

1. Iz patologicheskogo otdeleniya (zav. - E.F. Levkoyeva)  
Nauchno-issledovatel'skogo instituta glaznykh bolezney imeni  
Gel'mgol'tsa (dir. - A.V. Roslavl'sev).  
(AMYLOIDOSIS) (CONJUNCTIVA--DISEASES)

VASIL'YEVA, N.N., kand. med.nauk; GOLUBEVA, K.I., kand. med. nauk;  
GUL'KEVICH, Yu.V., prof.; DAL', M.K., doktor med.nauk,  
prof.; IL'INA, A.V., kand.med. nauk; LEVKOYEVA, E.F., doktor  
med.nauk, prof.; MASLOVA, I.P., kand. med.nauk; PRIGOZHINA,  
A.L., kand. med.nauk; UGRYUMOV, B.P., prof.; SHATILOVA, T.A.,  
kand. med.nauk; SHCHEGLOVA, A.A., kand. med.nauk; DVIZHKOV,  
P.P., prof., red. toma; STRUKOV, A.I., prof., red. toma;  
OSTROVERKHOV, G.Ye., prof., glav. red.; APATENKO, A.K.,  
kand. med. nauk, nauchn. red. toma

[Multivolume handbook on pathological anatomy] Mnogotomnoe  
rukovodstvo po patologicheskoi anatomii. Otv. red. A.I.  
Strukov. Moskva, Medgiz. Vol.1. [History of pathological  
anatomy; pathological anatomy of the endocrine glands, skin,  
ear, and eye] Iстория патологической анатомии; патоло-  
гическая анатомия заболеваний щитовидной железы, кожи,  
уха и глаза. Ред. тома: P.P.Dvizhkov i dr. 1963. 670 p.

(MIRA 16:11)

1. Член-корреспондент АМН СССР (for Strukov).  
(ANATOMY, PATHOLOGICAL)

LEVKOYeva, N. V. Cand Tech Sci -- (diss) "Study of the effect of the viscosity of liquids upon local resistances." Mos, 1959. 14 pp (Min of Higher Education USSR. Mos Order of Lenin Aviation Inst im Sergo Ordzhonikidze), 150 copies (KL, 50-59, 127)

LEV KOYZUA, N.V.

NOV/25/58

PARIS I BOOK EXPORTATOR

10(5) 1(2); 1(9)

Moscow. Aviatonnyy Institut imeni Serge Ovchinnikova

Издательство в област течети и гидродинамики: област  
стака (Изучение в теории и практике аэро- и гидродинамики: обзор  
исследований в теории и практике аэро- и гидродинамики: обзор  
издания (Research in Theoretical and Applied Aero-and Hydrodynamics : Col-  
lection of Articles) Moscow, Gorodets, 1959, 92 p. (Series: Issled. Aerod. Vyd.)  
111) 2,650 copies printed.

No. (Title page): M.S. Arribalzaga, Record Worker of the RSPN in Science,  
Professor, Ed. (Inside book): A. S. Olshevsky, Candidate of Technical Sciences;  
Ed. of Publishing House: L. A. Selskikh; Tech. Ed.: V. I. Ovchinnikov  
Rev.: A. S. Zayarnovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific workers, engineers,  
and students of advanced specialized courses.

CONTENTS: This collection of six papers is concerned with the aerodynamics of  
wing and shrouded propellers, hydrodynamic lubrication of bearings, and such  
fundamental problems as the viscosity of fluids and pressure losses due to  
local drag.

S. K. Kostylev, Chief Engineer. On the Problem of Determining Pressure  
Losses Due to Local Drag.

This paper presents a critical synopsis of current knowledge  
regarding pressure losses due to local drag in aircraft hydraulic  
systems. References: 17 Soviet, 5 German, 1 French.

6. M. M. Gulyaev, Candidate of Technical Sciences. Variation of the  
Viscosity of Certain Fluids With Pressure  
The results presented in this paper were obtained in the course  
of an investigation of the solubility of air in various working  
fluids used in aircraft hydraulic systems. This phase of the  
work is an extension of the research started by Candidate of  
Technical Sciences V. M. Kravcov. References: 4 Soviet, 1 trans-  
lation from English.

SOV/147-59-2-12/20

AUTHOR: Levkovets, N.V.

TITLE: On the Influence of the Reynolds Numbers on the  
Magnitude of the Resistance Coefficients of Diaphragms  
(O vliyanii chisla Reynol'dsa na velichiny  
koeffitsiyentov soprotivleniya diafragm)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya  
tekhnika, 1959, Nr 2, pp 105-112 (USSR)

ABSTRACT: In Ref 1, which deals with flows at high Reynolds numbers when the viscous forces may be neglected, a method of determining the resistance coefficients of diaphragms was developed, it being based on the relation between the pressure losses and the coefficient of contraction ( $\epsilon$ ) of the stream. Experiments show an excellent agreement with this method. Hahnemann (Ref 3) extended this method to other types of local resistance. Again experimental results agree well with the theory. At very small Reynolds numbers the viscous forces are most important and the inertia forces may, in turn, be neglected. For the laminar steady flow of a viscous

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SOV/147-59-2-12/20

On the Influence of the Reynolds Numbers on the Magnitude  
of the Resistance Coefficients of Diaphragms.

incompressible fluid the coefficient of resistance is given by Eq (1), the magnitude of the constant A depending only on the type of the local resistance. Wuest (Ref 4) developed a theoretical relation (Eq 2) for the pressure loss in a jet issuing from a circular orifice and this relation will be used to determine the constant A of Eq (1) by relating Eq (2) with Weisbach formula (Eq 3) which results in Eq (4). In the intermediate range of Reynolds numbers when both inertia and viscous forces must be taken into account the theoretical approach is more difficult. There are, however, many practical cases (e.g. hydraulic systems with organic mixtures of a high viscosity coefficient, lubrication conduits etc) which fall within this range of Reynolds numbers so that it is important to know the resistance coefficients for these cases. This was the object of the investigations presented in this paper. The experiments were carried out for  $1 \leq Re \leq 10,000$  and the diaphragms diameter to the pipe diameter ratio  $n = S_D/S_T$  from

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SOV/147-59-2-12/20

On the Influence of the Reynolds Numbers on the Magnitude  
of the Resistance Coefficients of Diaphragms

0.05 to 0.64. Fig.1 shows the experimental rig where:  
1 - reservoir; 2 - H III-11 pump; 3 - pump 623;  
4 - return valve; 5 - safety valve; 6 - tap;  
7 - hydraulic accumulator; 8 - pressure gauge;  
9 - thermometer; 10 - differential manometer;  
11 - flowmeter; 12 - filter. Experiments were  
carried out on the hydraulic mixture AMG-10; to  
increase the viscosity the fluid was thickened by  
additives and to decrease the viscosity some kerosene  
was added. In this way viscosity was varied from 3 to  
50 centistokes at the temperature of 20°C; Pinkevich  
viscosimeter was used to measure viscosity. The actual  
measuring procedure was as follows: two identical  
portions of the piping were accurately calibrated and  
then in one of them the local resistance was introduced.  
By taking simultaneously the pressure drops in the two  
portions by means of manometers the local resistance  
was obtained directly as the difference between the two  
readings. Large pressure differences were measured

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SOV/147-59-2-12/20

On the Influence of the Reynolds Numbers on the Magnitude  
of the Resistance Coefficients of Diaphragms

using mercury and for small pressure differences the set-up shown in Fig 2 was used. In this arrangement the fluid used for the experiments was employed in the manometer and the pressure was transmitted by means of the air supplied by the air containers shown in the figure. The total pressure difference between the points A and B is the sum of the two readings  $h_1$  and  $h_2$ . For extremely small pressure differences (of the order of  $0.001 \text{ kg/cm}^2$ ) the two containers were made adjustable so that  $h_2$  could be made zero. Fig 3 shows the results of these experiments. It is seen that for small Reynolds numbers the flow is fully laminar, i.e.  $\zeta$  is directly proportional to  $R_e$  (and therefore to the velocity of the flow) but the coefficient A increases as  $n = S_A/ST$  decreases. This last relation is given by Eq (7). Purely laminar flow ends when a critical value of Reynolds number, as given by Eq (8), is reached. The table (at the bottom of p 108) relates the results of the present investigations (the last

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SOV/147-59-2-12/20

'On the Influence of the Reynolds Numbers on the Magnitude  
of the Resistance Coefficients of Diaphragms

line) with the theoretical values according to Al'tshul' and with the results of TsAGI. In the intermediate range of Reynolds numbers the relation between  $\xi$  and  $n$  as well as  $Re$  is a complex one. When  $n$  is small the transition from the purely laminar flow line to the turbulent flow line is smooth at both ends of the graph but for larger values of  $n$  the latter transition is sudden and rapid, as shown in Fig 3. Eq (9) and (10) give some relations for the square areas for the flow through diaphragms. For flows through a valve Rowley (Ref 5) found  $\xi_{KB} = 12.5$ . Hence combining the two, we get for this case  $A = 220$ ;  $Re_{cr} = 9$ . The broken line in Fig 3 shows  $\xi = f(Re)$  for the valve based on the above relations and on the experimental data of Ref 5. The two portions of the graph meet perfectly. In practice it may be convenient to represent the local resistance by using the notion of the equivalent length of the

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SOV/147-59-2-12/20

On the Influence of the Reynolds Numbers on the Magnitude  
of the Resistance Coefficients of Diaphragms

pipe as given by Eq (11), where  $d$  is the pipe diameter and  $\lambda$  is a coefficient to be determined experimentally. Fig 4 shows this relation for various diaphragms. If the Reynolds number is based on the velocity of the flow through the diaphragm and on its diameter (Eq 12) then Eq (13) gives the coefficient of resistance and its variation with  $Re$  is shown in Fig 5. The following conclusions then hold: 1) For small Reynolds numbers  $\xi_\Delta$  does not depend on the amount of opening of the diaphragm and is given by Eq (14). 2) As Reynolds number increases, the larger the opening of the diaphragm the larger is the Reynolds number for which the flow ceases to be laminar. 3) For very large Reynolds numbers  $\xi_\Delta$  does not depend on  $Re$  only on the amount of opening of the diaphragm. The graph is similar to that obtained by Nikuradze thus showing the similarity of flows in

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On the Influence of the Reynolds Numbers on the Magnitude  
of the Resistance Coefficients of Diaphragms SOV/147-59-2-12/20

pipes and through diaphragms. There are 5 figures,  
1 table and 6 references, 3 of which are Soviet,  
2 German and 1 English.

ASSOCIATION: Moskovskiy aviatsionnyy institut, Kafedra oborudovaniya  
samoletov (Moscow Institute of Aeronautics, Chair of  
Aircraft Instruments)

SUBMITTED: November 10, 1958

Card 7/7

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Interaction of local resistances. Izv.vys.ucheb.zav.; av.  
tekhn. 2 no.3:143-145 '59. (MIRA 12:12)

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samoletov.  
(Hydrodynamics)

LEVKOYeva, N.V.

Relationship between local resistance coefficients of pipe fittings  
and the Reynolds number. Trudy MAI no.143:131-139 '61.  
(MIRA 15:6)  
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[Shock absorption and control of take-off and landing devices of airplanes] Amortizatsiia i upravlenie vzletno-posadochnykh ustroistv samoletov. Moskva, Mosk. aviatcionalnyi in-t im. Sergo Ordzhonikidze, 1962. 307 p.

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and some of its derivatives. Zhur. org. khim. 1 no.1:174-182 Ja  
'65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut  
imeni S.Ordzhonikidze.

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red.; LEVMAN, B.S., red.; LOGINOV, Z.I., red.; MAYKOV, N.K., red.;  
SMIRNOV, L.I., red.; ERLANIETS, V.V., red.; SHNEYDER, Ye.B., red.  
izd-va; TEMKINA, Ye.L., tekhn.red.

[Proceedings of the section on building materials] Sektsia  
stroitel'nykh materialov. Moskva, Gos. izd-vo lit-ry po stroit.,  
arkhit. i stroit. materialam, 1958. 386 p. (MIRA 12:1)

1. Vsesoyuznoye soveshchaniye po stroitel'stvu. Moscow, 1958.
  2. Glavnyy ekspert Otdela stroitel'nykh materialov i lesnoy  
promyshlennosti Gosstroya SSSR (for Maykov).
- (Building materials)

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[Resources of the cement industry of the U.S.S.R.; based on data from the seminar of workers of the cement industry] Rezervy tsementnoi promyshlennosti SSSR; po materialam seminara rabotnikov tsementnoi promyshlennosti. Moskva, Gosplanizdat, 1959. 199 p. (MIRA 13:3)

1. Moscow. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti. 2. Direktor Gosudarstvennogo vsesoyuznogo nauchno-issledovatel'skogo instituta tsementnoy promyshlennosti (NIItsement) (for Kholin). 3. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti (NIItsement) (for Loginov, Lyusov).  
(Cement industries)

VARAVITSKIY, I.B., kand.tekhn.nauk; DOROFEEV, I.Ye., inzh.; ZYSKINA, Ye.M.,  
inzh.; LAKHMANOV, A.I., inzh.; LEVNER, I.A., inzh.; TRACHUK, V.P.,  
inzh.; TUCHKOVSKIY, P.M., inzh.

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Physical and mechanical characteristics of hardboard made with  
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Mladen, dr.

Four cases of lymphogranulomatosis with rare clinical picture. Med.  
pregl., Novi Sad 7 no.5:394-400 1954.

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prof. dr. C. Flavsic. Patolosko-anatomski institut Medicinskog  
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STRASER, T.; ARANDELovic, VUCINIC, R; LEVNTAL, Z.

Relations between Osler's disease and Bouillaud's disease. Acta.  
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1. IV-ieme Clinique medicale, Faculte de Medecine, Universite  
de Belgrade.

(RHEUMATIC HEART DISEASE,  
relation to subacute bact.endocarditis (Fr))  
(ENDOCARDITIS, SUBACUTE BACTERIAL  
relation to rheum.heart dis.(Fr))

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Multiple gangrene during subacute bacterial endocarditis;  
case report. Srpski arh. celok. lek. 83 no.4:530-535 Apr 55.

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Upravnik: Cedomir Plavsic.

(ENDOCARDITIS, SUBACUTE BACTERIAL, compl.

multiple gangrene (Ser))

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subacute bact. endocarditis (Ser))

LEVNTAL, Zdenko, Dr.

Potassium perchlorate treatment of hyperthyroidism. Med. glasn.  
10 no.8:321-325 Aug 56.

1. IV Interna klinika Medicinskog fakulteta u Beogradu (upravnik  
prof. dr. C. Plavsic).

(HYPERTHYROIDISM, ther.

potassium perchlorate (Ser))

(POTASSIUM, ther. use

potassium perchlorate in hyperthyroidism (Ser))

(CHLORINE, ther. use

same))

LEVNTAL, Zdenko, Dr.

History of tuberculosis. Med. glasn. 10 no.11-12:514-516  
Nov-Dec 56.

(TUBERCULOSIS,  
hist. (Ser))

LEVNTAL, Zdenko

History of tuberculosis. Med. glasn. 11 no.3:111-114 Mar 57.  
(TUBERCULOSIS,  
hist. (Ser))

~~LIVNTAL, Z.~~

Dr. Robert Kukovec (1910-1945). Med. glasn. 13 no. 3:120-122 Mar 59.

1. Jas je život pred name.  
(BIOGRAPHIES,  
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LEVNTAL, Zdenko, Dr.; KONSTANTINOVIC, Sava, Dr.

Circumscribed myxema. Lijec vjes. 81 no.1-2:27-34 1959.

1. Iz Interne klinike B i Dermato-veneroloske klinike Medicinskog fakulteta u Beogradu. Klinik fur innere Krankheiten B und Klinik fur Haut- und Geschlechstkrankheiten der Universitat, Beograd.

(MYXEDEMA, case reports  
circumscribed (Ser))

LEVNTAL, Zdenko, doc., dr., (Beograd)

Some current problems of medical ethics. Med. glasn. 14 no.11:  
507-509 N '60.

1. Urednik, "Medicinski glasnik".

(ETHICS MEDICAL)

LEVNTAL, Zdenko, doc., dr.; STRASER, Toma, doc., dr.; KOMARECKI, Viktor, dr.

On certain mental factors in the development of hyperthyroidism.  
Med. glasn. 15 no.2/2a:91-96 F '61.

1. Interna klinika B Medicinskog fakulteta u Beogradu (Upravnik:  
prof. dr R. Berović). 2. Urednik, "Medicinski glasnik" (for Levntal).

(HYPERTHYROIDISM psychol)

POLEKSIC, Joko, dr.; STOJILJKOVIC, Srboljub, doc., dr; LEVNTAL, Zdenko,  
doc., dr.; JOVCIC, Manasije, dr.; MILOVANOVIC, Dimitrije, dr.

Our experience with psychotic disorders in patients with thyro-toxicosis. Med. glasm. 15 no.1:19-22 Ja '61.

1. Neuropsihijatrica klinika Medicinskog fakulteta u Beogradu  
(Upravnik: prof. dr U. Jekic. 2. Urednik, "Medicinski glasnik" (for  
Levntal).

(HYPERTHYROIDISM compl) (PSYCHOSES etiol)

LEVNTAL, Z.

Apropos of the popular medicine at Kresevo and its  
environs. Bul sc Youg 8 no. 1/2: 18 F. Ap '63.

1. Medicinski fakultet, Univerzitet, Beograd.

YUGOSLAVIA

Docent Dr Zdenko LEVNTAL [Affiliation not given]

"Fourth Congress of Medical and Dental Students of Yugoslavia."

Belgrade, Medicinski Glasnik, Vol 17, No 1; Jan 63, pp 42-43.

Abstract : Report of the 3-day meeting in Sarajevo in July 1962; 68 papers were presented in 9 sessions and 40 of the papers received prizes. Laudatory comments; 1963 meeting planned for Skopje.

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/ YUGOSLAVIA

Docent Dr Zdenko LEVNTAL [Affiliation not given]

"Seminar on Uses of Radioisotopes in Medicine."

Belgrade, Medicinski Glasnik, Vol 17, No 1, Jan 63; pp 43-44.

Abstract : This 2-week seminar included 52 lectures during the morning with laboratory exercises in the afternoons in December 1962 in Belgrade. The curriculum is briefly sketched. The facts that mimeographed course notes were provided is particularly gratifying.

1/1

BOJANOVIC, J.J.; LEVNTAL-KARAKUSEVIC, M.D.; NIKOLIC, K.M.

Effect of insulin on the metabolism of proteins, lipids and glucides.  
II. The serum lipid content in schizophrenic patients in deep insulin  
coma. Acta med. jugosl. 16 no.2:151-165 '62.

1. Hemijski institut Medicinskog fakulteta, Balneoklimatolski institut  
NRG i Neuro-psihijatrijska klinika Medicinskog fakulteta u Beogradu.  
(SHOCK THERAPY, INSULIN) (BLOOD LIPIDS) (SCHIZOPHRENIA)

S/123/59/000/010/049/068  
A004/A001.

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 10, p. 163,  
# 38455

AUTHOR: Levochkin, F. K.

TITLE: A Pocket Gamma-Detector 19

PERIODICAL: V sb.: Issled. v obl. dozimetrii ioniziruyushchikh izlucheniy.  
Moscow, AN SSSR, 1957, p. 121

TEXT: The author describes a battery pocket gamma-detector for the detection of gamma radiation and the approximate rating of the dose rate with the range from the natural background and up to some micro-roentgen per second. Two gas discharge tubes (either MH-5 (MN-5) or MTX-90 (MTKh-90) are used as indicators, one of which is put in series with the radiation counter, the other at the output of the RC-filter, connected in parallel to the load resistor of the counter. The device is calibrated with the aid of the gamma source by compiling a table of relation between the dose rate (in micro-roentgen/second) and the number of flashes of the neon gas discharge tubes. There is one circuit. F. A. K.

Translator's note: This is the full translation of the original Russian abstract.

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PAGE 1 BOOK EXPLOITATION

B07/599

*Document Radioaktivnosti i dosimetricheskikh metodik (Collection of Radiochemical and Dosimetric Methods)* Moscow, Nedra, 1959, 459 p. Errata  
Ed., (title page): N.G. Osipov, V.A. Margulis, A.M. Novyy, L.N. Savchenko,  
Yu.M. Shul'kenbergs Ed. (First book); V.P. Slobodcov, Tech. Ed.; A.I.  
Zaburov.

**PURPOSE:** This collection of articles is intended for physicists, sanitarians and public health doctors, chemists and other specialists working in radiative dosimetry.

**CONTENTS:** This work discusses the following subjects: (1) principles of controlling radiation doses in institutions where work is carried on with radioactive substances; (2) radio-chemical and chemical methods for determining various radioactive substances in samples of air, water, soil and foodstuffs; (3) physical methods of measuring contamination of the body by radioactive gases and chemicals, and methods for determining the level of contamination of working surfaces, clothes and leather coverings; (4) methods of measuring external ionizing (X and gamma) radiation and methods of determining the activity of solids and liquids radioactive sources. There are four sections dealing with methods of calculating the total dose from a source of ionizing radiation, units of activity, and doses from natural (background) radioactivity in the calcium of foodstuffs. Sanitary requirements observed during transportation, storage, and handling of radioactive substances are discussed, as well as the permissible level of radioactive radiation. The editor's thank Yu.V. Slobodcov and Ch. V. Physical Methods of Determining Contamination of the Ambient Atmosphere Due to Radioactive Aerosols and Gases

1. Determination of the active concentration of radioactive aerosols (Yu.M. Shul'kenbergs)  
2. Determination of the active concentration of radioactive dust content of air with the aid of ionization filters (Yu.M. Shul'kenbergs and V.M. Korobov, V.I. Krasnoperov, V.M. Kochubey)
3. Determination of the concentration of active aerosols with the aid of electric precipitators type KP-2 (Yu.M. Shul'kenbergs and E.L. Kargin)
4. Measurement of active aerosols with the aid of 16N-ridges (Ch. V. Slobodcov and Yu.P. Slobodcov)
5. Radiation metering of beta-active gases by means of an ionization counter (A.M. Mikhaylov and A.D. Tsvetkov)
6. Determination of effluent air contamination due to radioactive gases and aerosols (Yu. Slobodcov, I.M. Slobodcov)
7. Measurement of the concentration of active aerosols (V.I. Krasnoperov and V.M. Korobov)
8. Activimeter control of the radon content in air
9. Measurement of the concentration of active gases in the air by means of an air-wall chamber (V.M. Slobodcov, I.M. Slobodcov, and Yu.M. Shul'kenbergs)
10. Determination of concentration of beta-active gases in the air with the aid of a cylindrical counter placed in a chamber of fixed volume (V.P. Slobodcov)

Recommended Literature

- Ch. VI. Methods of Measuring the Level of Contamination of Surfaces
  1. Instruments for measuring the maximum permissible level of contamination of surfaces by active substances (Yu.M. Shul'kenbergs)
  2. Calibration of instruments for measuring the contamination of surfaces by active substances (Yu.M. Shul'kenbergs)
  3. Measuring the contamination of third surface (furniture, equipment and installations) (Yu.M. Shul'kenbergs)
  4. Checking special clothing for radioactive contamination
  5. Determining the radioactive contamination of the body (Yu.M. Shul'kenbergs)
  6. Determining the radioactive contamination of the hands and finger nail (A.M. Slobodcov, Yu. Slobodcov and I.O. Orlina)
- Ch. VII. Methods of Measuring External Sources of X and Gamma Radiation (U.Ia. Margulis and B.M. Savchenko)
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  2. Organization of dosimetric monitoring

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*Sbornik radiofizicheskikh i dosimetriceskikh metodov (Collection of Radiochemical and Dosimetric Methods)* Moscow, Medgiz, 1959. 459 p. Arrestra slip inserted. 9,000 copies printed.

Ed. (Title page): N.G. Quay, U.Ye. Margul's, A.M. Maruy, M.N. Tsvetkov, Yu.M. Shchukin; Ed. (Inside book): V.I. Labanov, Tech. Ed.: A.I. Kabanova.

PURPOSE: This collection of articles is intended for physicians, sanitarians and public health doctors, chemists and other specialists working in radioactive industries.

CONTENTS: This work discusses the following subjects: (1) principles of organizing sanitation and dosimetric control in institutions where work is carried on with radioactive materials; (2) radiochemical and chemical methods for determining certain radioactive substances in aqueous or air, water, soil and foodstuffs; (3) physical method of measuring contamination of the air by radioactive gases and aerosols, and methods for determining the level of contamination of working surfaces, clothes and leather coverings; (4) methods of measuring exterior streams of air and gamma-radiation, and methods of measuring the activity of solids and liquids and radioactive sources. There are four appendices dealing with methods of calculating the total dosage from sources of ionizing radiation, units of activity, and doses from natural (background) radioactivity in the calcium of foodstuffs. Sanitary regulations observed during transportation, storage and handling of radioactive substances are discussed, as well as the permissible levels of radioactive radiation. The editors thank Yu.I. Sviridov and D.I. Shchukin. References are at the end of each chapter.

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LEVOCHKIN, F.K.; SOKOLOV, Yu.Ya.

Change in the activity of the fission products of U<sup>235</sup> and Pu<sup>239</sup> with time. Atom.energ. 10 no.4:403-404 Ap '61. (MIRA 14:4)  
(Fission products—Decay) (Uranium—Isotopes) (Plutonium)

Levochkin, E.K.

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PHASE I BOOK EXPLOITATION

SOV/6333

Bochkarev, V. V., ed.

Tekhnika izmereniye radioaktivnykh preparatov; sbornik statey (Techniques for the Measurement of Radioactive Preparations; Collection of Articles) Moscow, Gosatomizdat, 1962. 4600 copies printed.

Eds.: A. M. Smirnova and M. A. Smirnov; Tech. Ed.: S. M. Popova.

PURPOSE: This book is intended for specialists in nuclear instrumentation.

COVERAGE: The book is a collection of articles on recent developments in 1) measurement of the activity and 2) analysis of the composition of emissions of radioactive preparations. The methodology and apparatus used in these studies are described in detail. References are given at the end of each article.

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Card 3/5 2%

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S/089/62/012/001/010/019  
B102/B138

24.6400

AUTHORS: Levochkin, F. K., Sokolov, Yu. Ya.

TITLE: Angular distribution of  $\beta$ -radiation from thick sources

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 53-54

TEXT: The method of thick sources is widely used for determining specific activity, to which the  $\beta$ -yield is proportional for emitters whose thickness exceeds the  $\beta$ -particle range. The angular distribution of the  $\beta$ -radiation must be known. It was investigated by measuring the absorption and scattering of  $\beta$ -particles from a point source in an absorber. The source was placed between a thick backing and foils of different thicknesses. The absorbers (backing and foil) were made of Al, Cu, Zn and Pb. Measurements were made at a relative solid angle of  $\omega = 4.7 \cdot 10^{-4}$  in a vacuum chamber, by means of an end-window counter type T-25 60J (T-25 BFL). Backing and foils were mounted on a rotary frame on the axis of which was the point source. Not more than 1.5 % of the scattered radiation hit the counter window. From the  $\beta$ -flux  $N_\theta(t)$  thus measured the  $\beta$ -yield  $n_\theta$  from the surface of a thick source was calculated by graphical integration of

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